

## Renesas RA Family

# Migrating Projects to New FSP Version

## Introduction

This section describes the steps to migrate an existing RA Project to a newer FSP pack version, and then build and run the example project. The procedure in this migration guide applies to all RA devices and evaluation kits, and all software listed in the Required Resources section.

## Required Resources

- An RA evaluation kit (for example, EK-RA6M3)
- A PC running Microsoft® 10 with the following Renesas software installed as required:
  - Flex Software Package (FSP) v1.0.0 or greater
  - e<sup>2</sup> studio ISDE v7.6.0 or greater
  - RA Smart Configurator (RASC) v7.6.0 or greater
  - IAR EW for ARM v8.50.1 or greater
  - Keil MDK (v5.29 or higher) and ARM compiler 6 (version 6.13 or higher)

## Contents

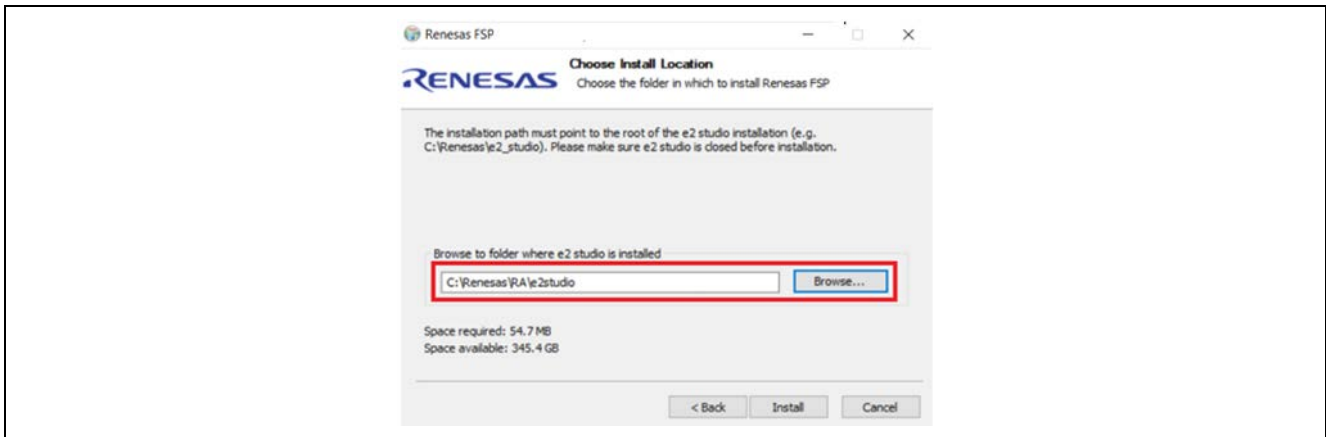
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## 1. Installing Latest FSP Packs

### A. e<sup>2</sup> studio

This can be done in two ways:

- Download and install the latest FSP with e<sup>2</sup> studio Installer (for example, `setup_fsp_x_x_x_e2s_x_x.exe`). This should be done if the e<sup>2</sup> studio version has changed.
- Download and run the latest FSP pack installer (for example, `FSP_Packs_x.x.x.exe`) and browse to the folder where e<sup>2</sup> studio is installed.

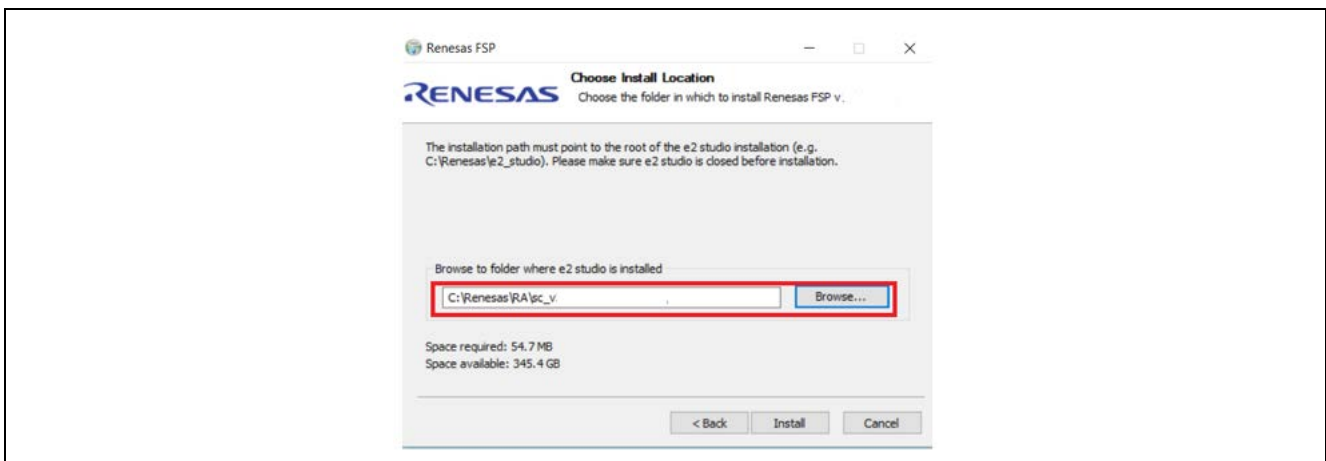


**Figure 1. Choosing Install Location in e<sup>2</sup> studio**

### B. Keil and IAR

This can be done in two ways:

- Download and install the new RASC (for example, `setup_fsp_x_x_x_rasc_x_x.exe`) with the latest FSP pack version.
- Download and run the latest FSP pack installer (for example, `FSP_Packs_x.x.x.exe`) and browse to the folder where RASC is installed.



**Figure 2. Choosing Install Location in Keil and IAR**

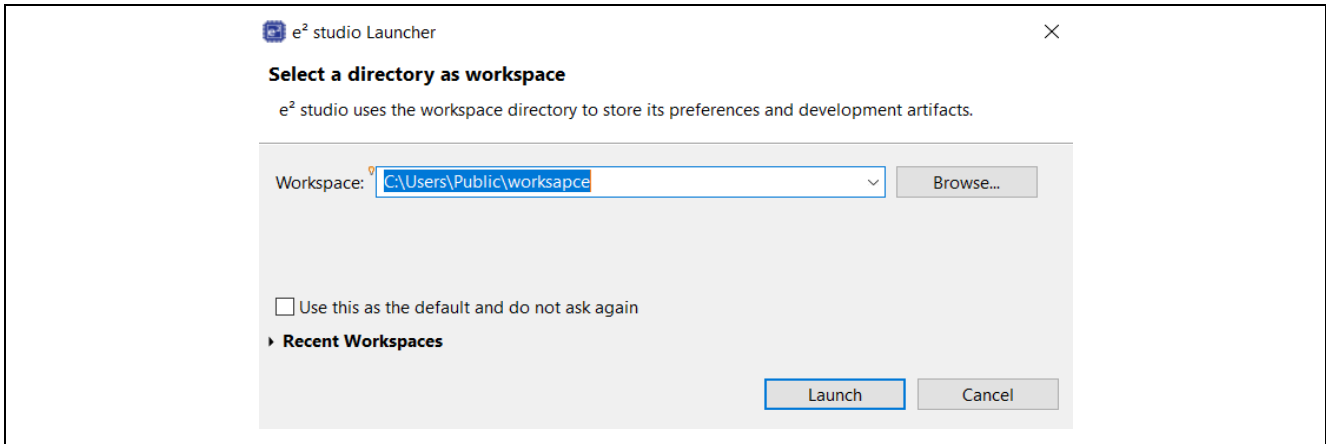
### C. Additional steps:

- a. IAR: To use RASC with EWARM, latest RASC needs to be configured as a tool in EWARM by selecting the menu item **Tools > Configure Tools**.  
Command: Select **Browse...** and navigate to `rasc.exe` in the installed RA SC.
- b. Keil: Import the latest RA device pack. (for example, `MDK_Device_Packs_x.x.x.zip`).  
Extract the archive file to locate the RA device pack. To import the RA device pack, launch the `PackInstaller.exe` from `<keil_mdk_install_dir>\UV4`. Select the menu item **File > Import...** and browse to the extracted `.pack` file.

## 2. Migrating Project in e<sup>2</sup> studio

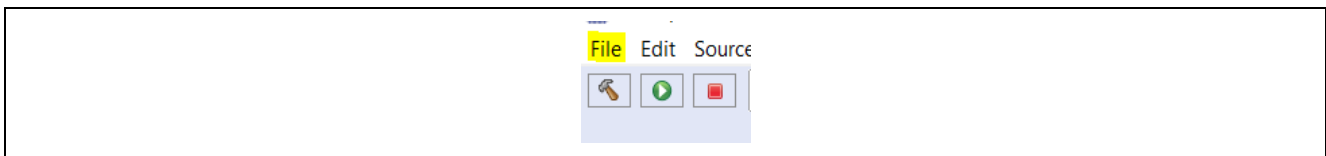
### 2.1 Migrating an Existing Project in e<sup>2</sup> studio

1. Start by opening e<sup>2</sup> studio.
2. Follow the steps below to launch the workspace.
  - A. At the end of e<sup>2</sup> studio startup, you see the **e<sup>2</sup> studio Launcher** dialog box as shown in Figure 3.



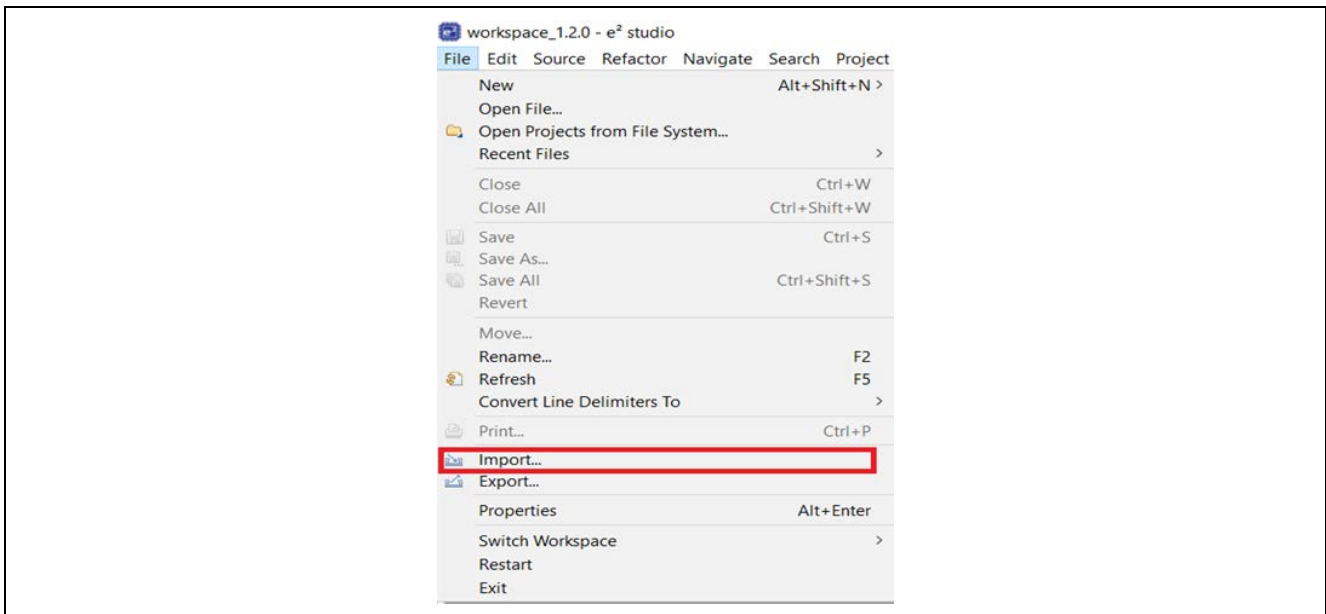
**Figure 3. e<sup>2</sup> studio Launcher Dialog Box**

- B. If you do not see the dialog box, you might have turned it off. If this is the case, open your desired project and skip to step D. Otherwise, continue with the following steps.
  - C. Enter a new workspace name in the **e<sup>2</sup> studio Launcher** dialog box.
  - D. Click **Launch**.
  - E. When the workspace is opened, you may see the **Welcome** window.
3. You are now in the workspace that you want to import the project into. Click **File** in the menu bar.



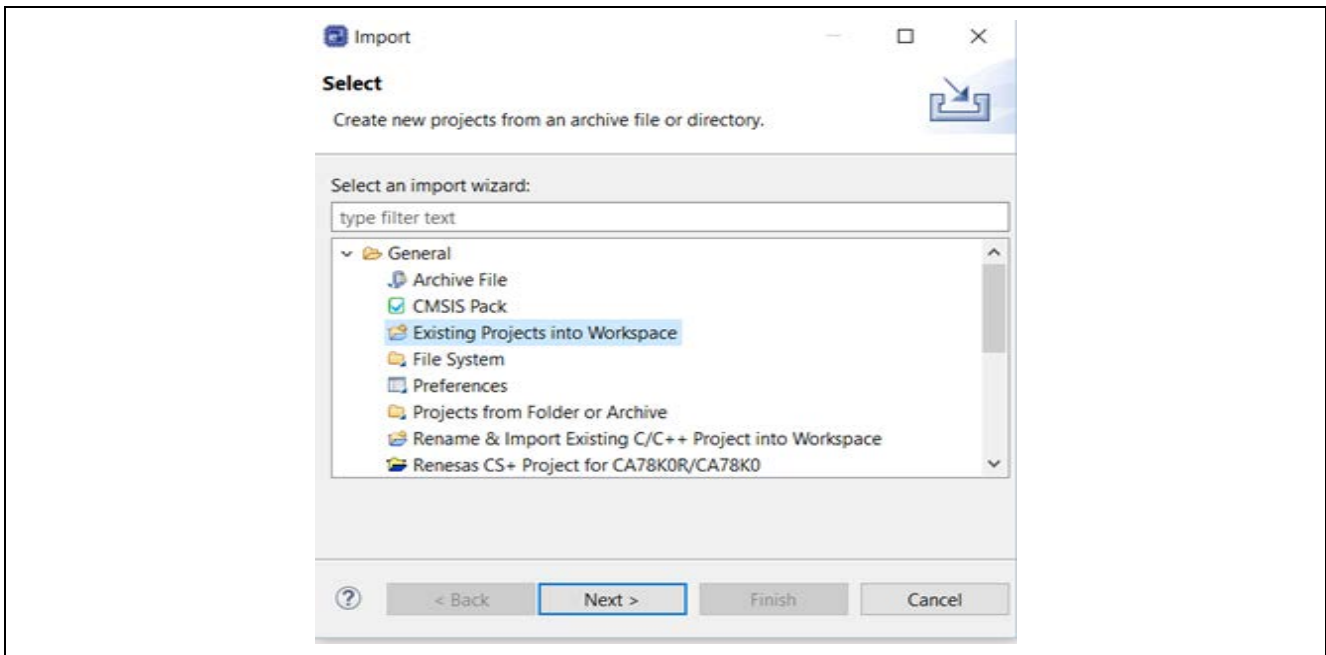
**Figure 4. File Menu Bar in the Workspace**

4. Click **Import** on the **File** drop-down menu.



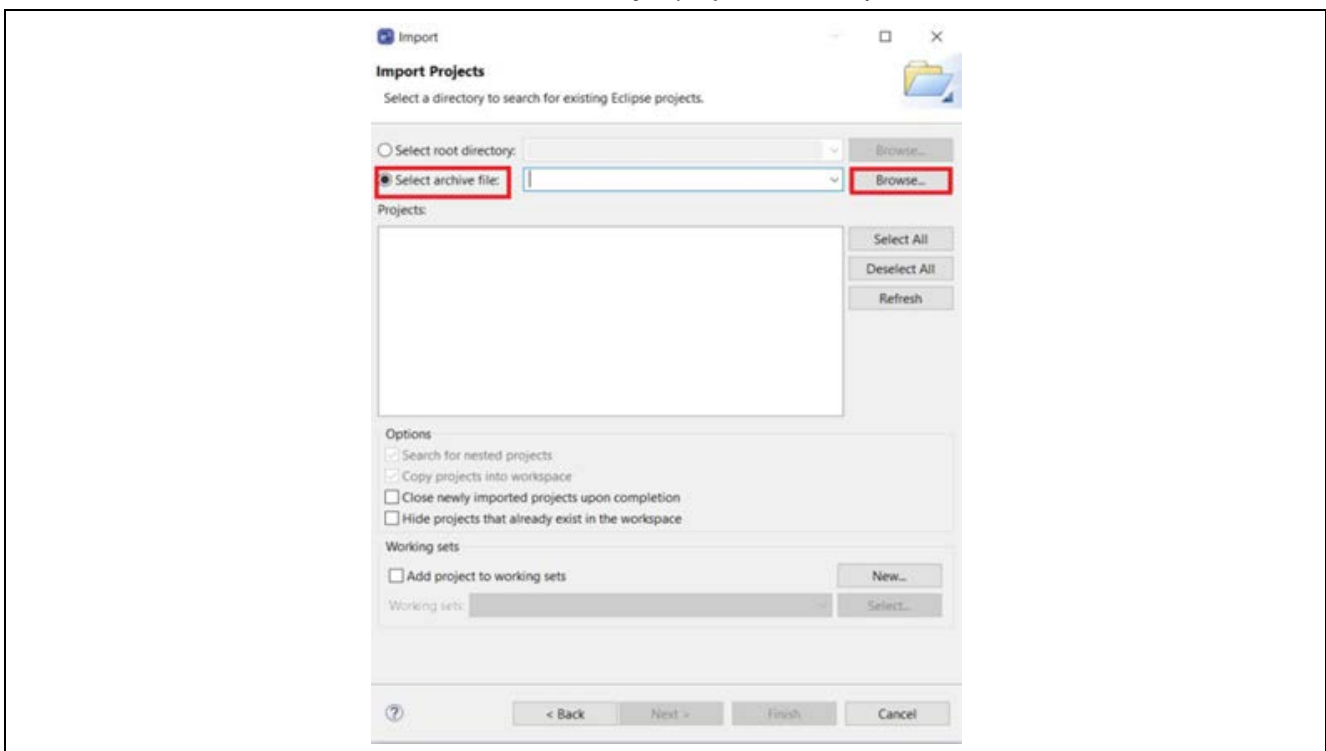
**Figure 5. Selecting Import Option in the File Menu**

5. In the **Import** dialog box shown in the figure below, select the **General** option, and then select **Existing Projects into Workspace** to import the project into the current workspace.



**Figure 6. Selecting Workspace to Import Existing Projects**

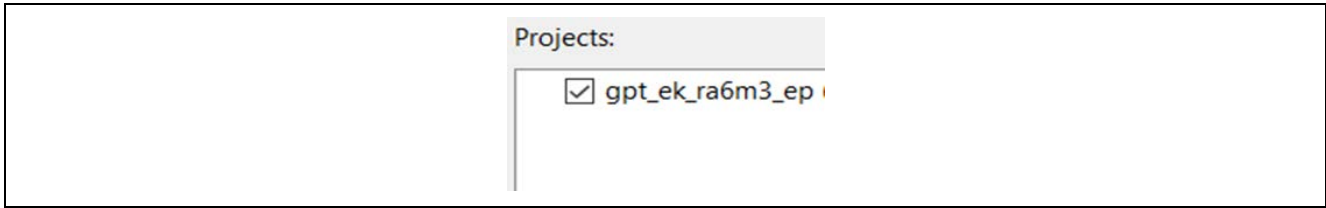
6. Click **Next**.  
 7. Click **Select archive file** or **Select root directory** if project is already extracted and click **Browse**.



**Figure 7. Selecting Archive File or Root Directory**

8. Browse to the folder where the zip/extracted file for the project you want to import is located.  
 9. Select the file for import. For the purpose of illustration `gpt_ek_ra6m3_ep.zip` is used in this document.  
 10. Click **Open**.

11. Select the project to import from the list of projects.

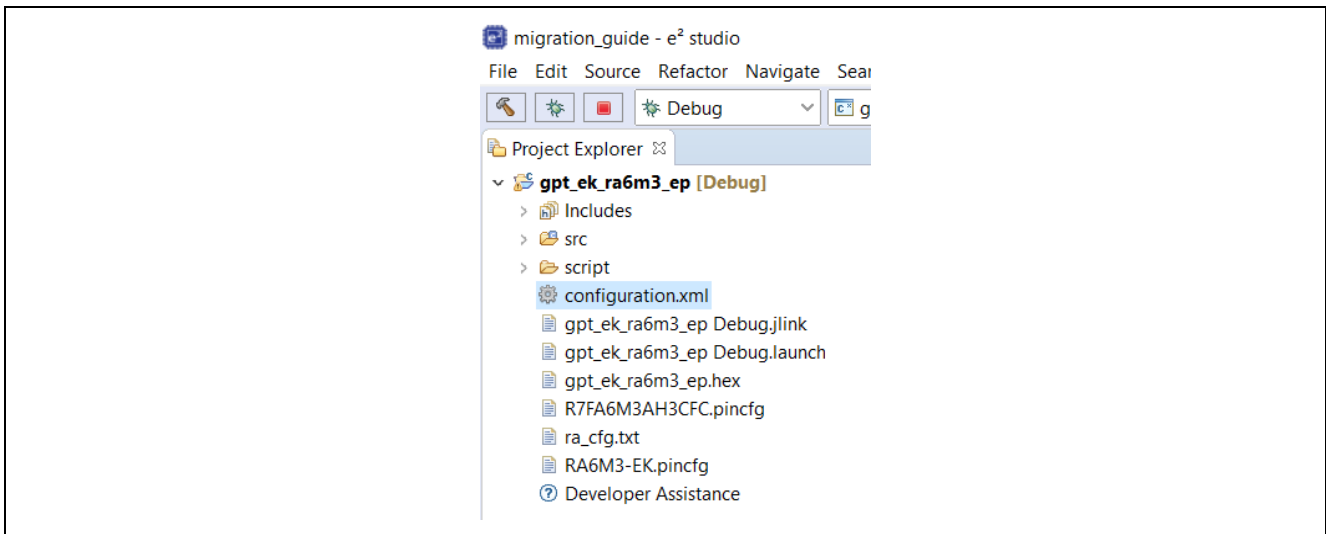


**Figure 8. Selecting the Project to Import**

12. Click **Finish** to import the project.

13. Now that the project has been successfully imported, you can start configuring the project to migrate for the hardware.

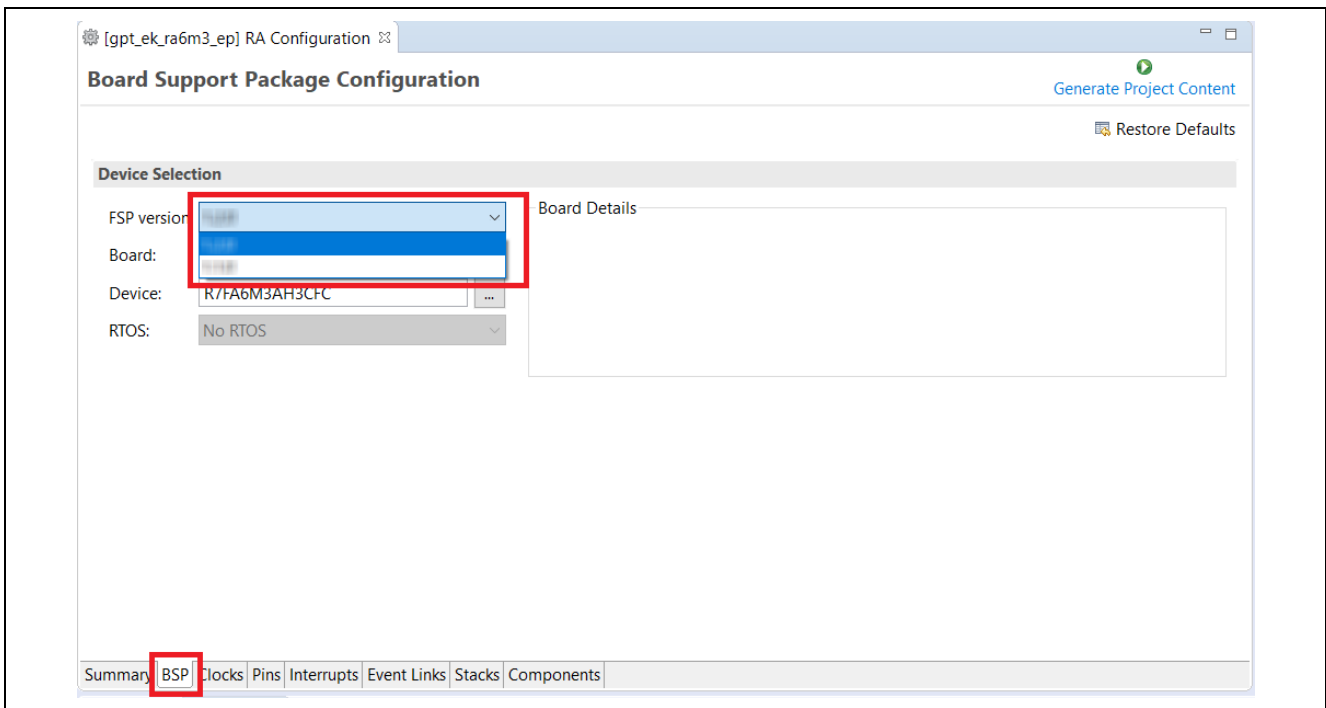
14. Open the RA Configuration, by double-clicking the `configuration.xml` file in the Project Explorer.



**Figure 9. Opening the RA Configuration using configuration.xml**

15. After clicking, a dialog box may appear to migrate the project to latest FSP version. Click **OK**.

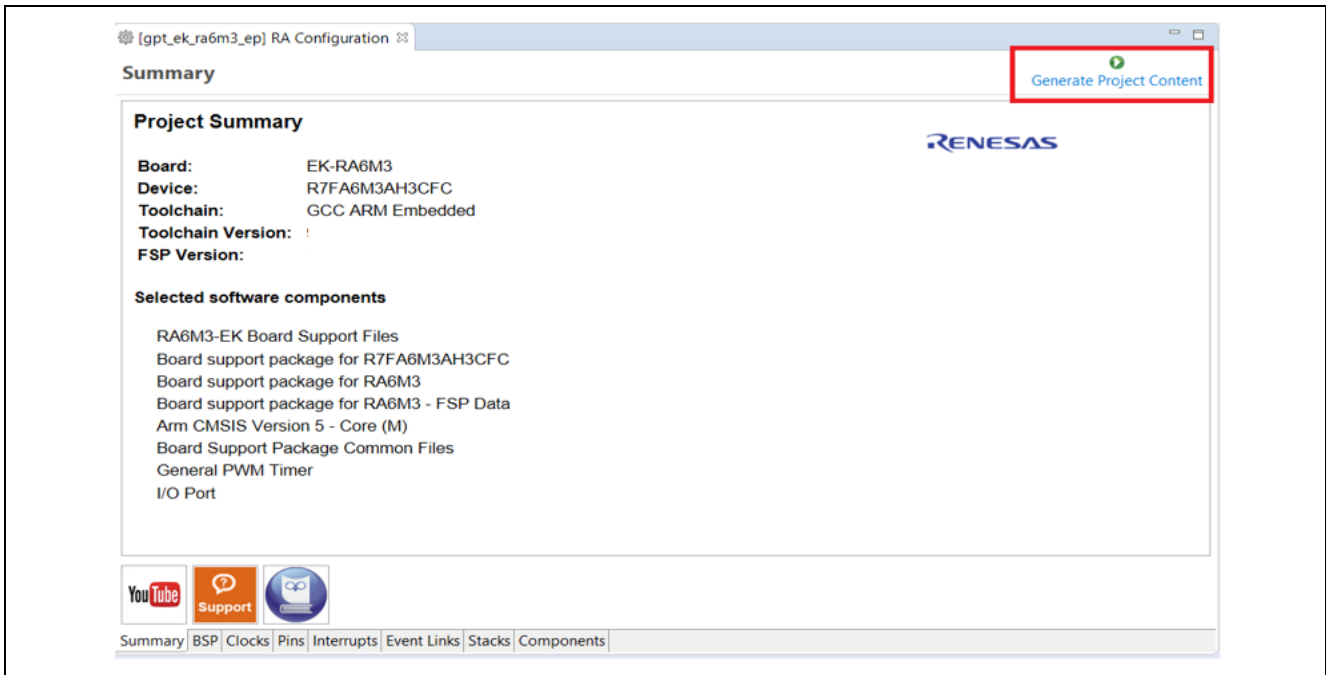
16. If not, click on **BSP** tab and choose the appropriate FSP version from drop down as shown.



**Figure 10. Choosing the FSP Version from the BSP Tab**

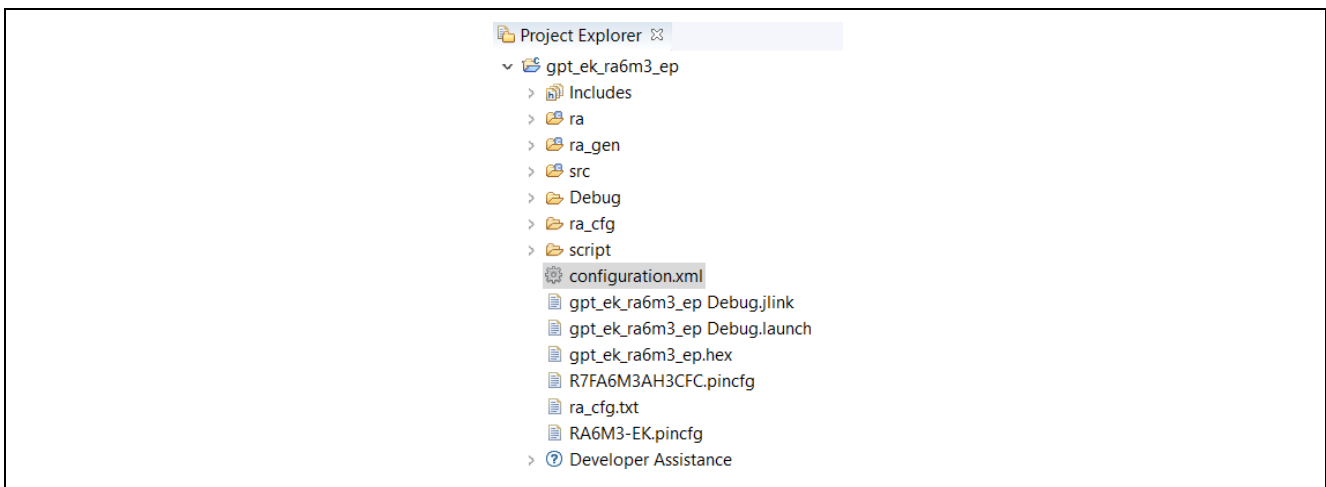
## 2.2 Generating the Project Files in e<sup>2</sup> studio

1. In the **RA Configuration** window, save the configuration and click the **Generate Project Content** button.



**Figure 11. Clicking the Generate Project Content Button**

2. The project should resemble the folder structure and the project is ready to build.



**Figure 12. Folder Structure for the Ready to Build Project**

## 2.3 Building and Running the Project

Refer to the section “Tutorial: Your First RA MCU Project – Blinky” in [FSP Documentation](#) for steps on building and running the project.

### 3. Migrating a Project in Keil $\mu$ Vision

#### 3.1 Migrating an Existing Project in Keil $\mu$ Vision

1. Start by unzipping the example project, `gpt_ek_ra6m3_ep.zip` and open the project in file explorer.
2. Open the Keil project by double clicking the  $\mu$ Vision project file as shown in Figure 13.

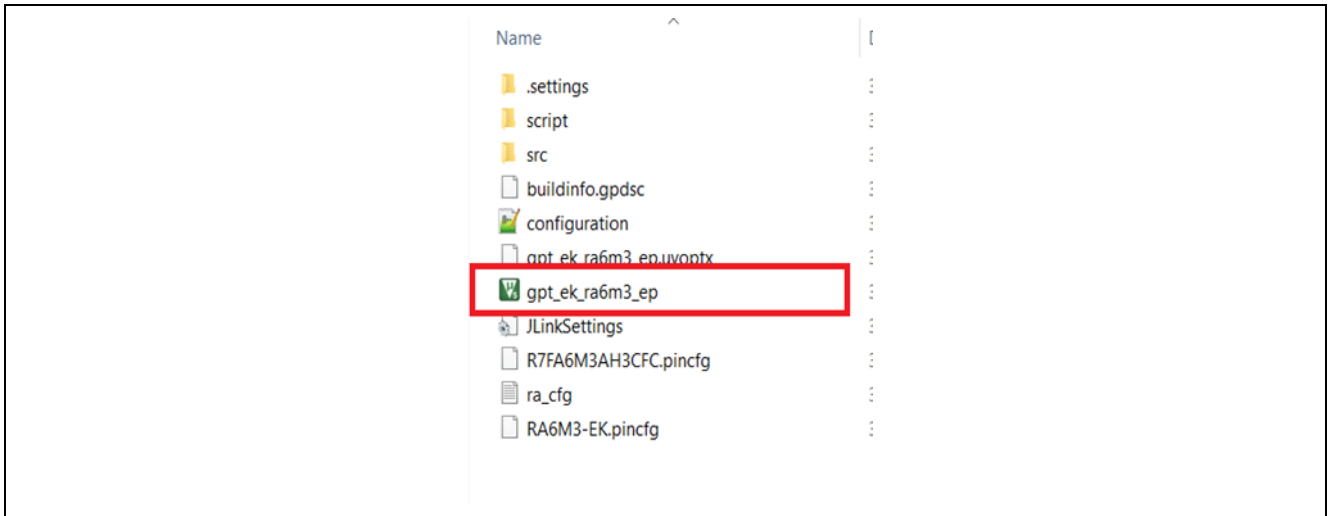


Figure 13. Opening the Keil Project

3. After opening the project, you should see the project structure as shown in Figure 14.

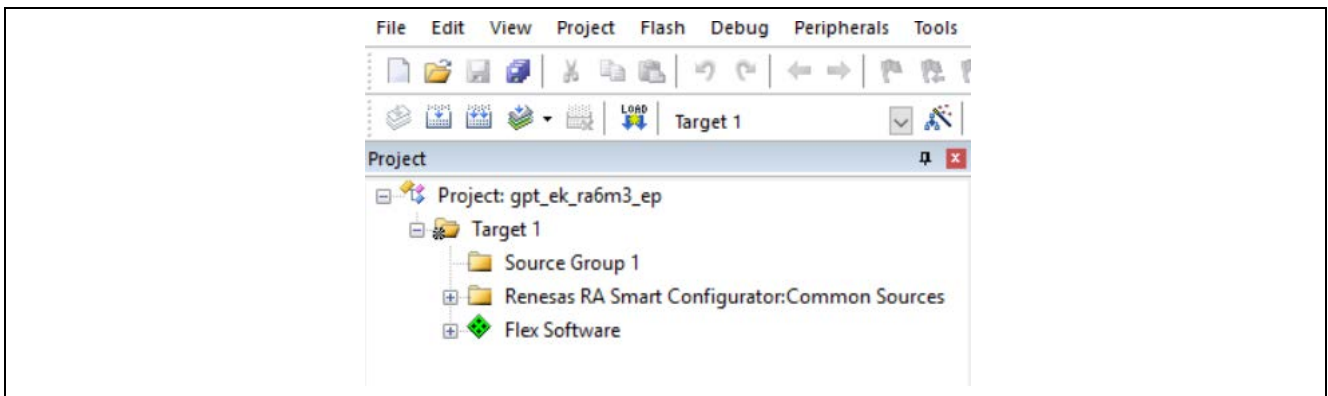
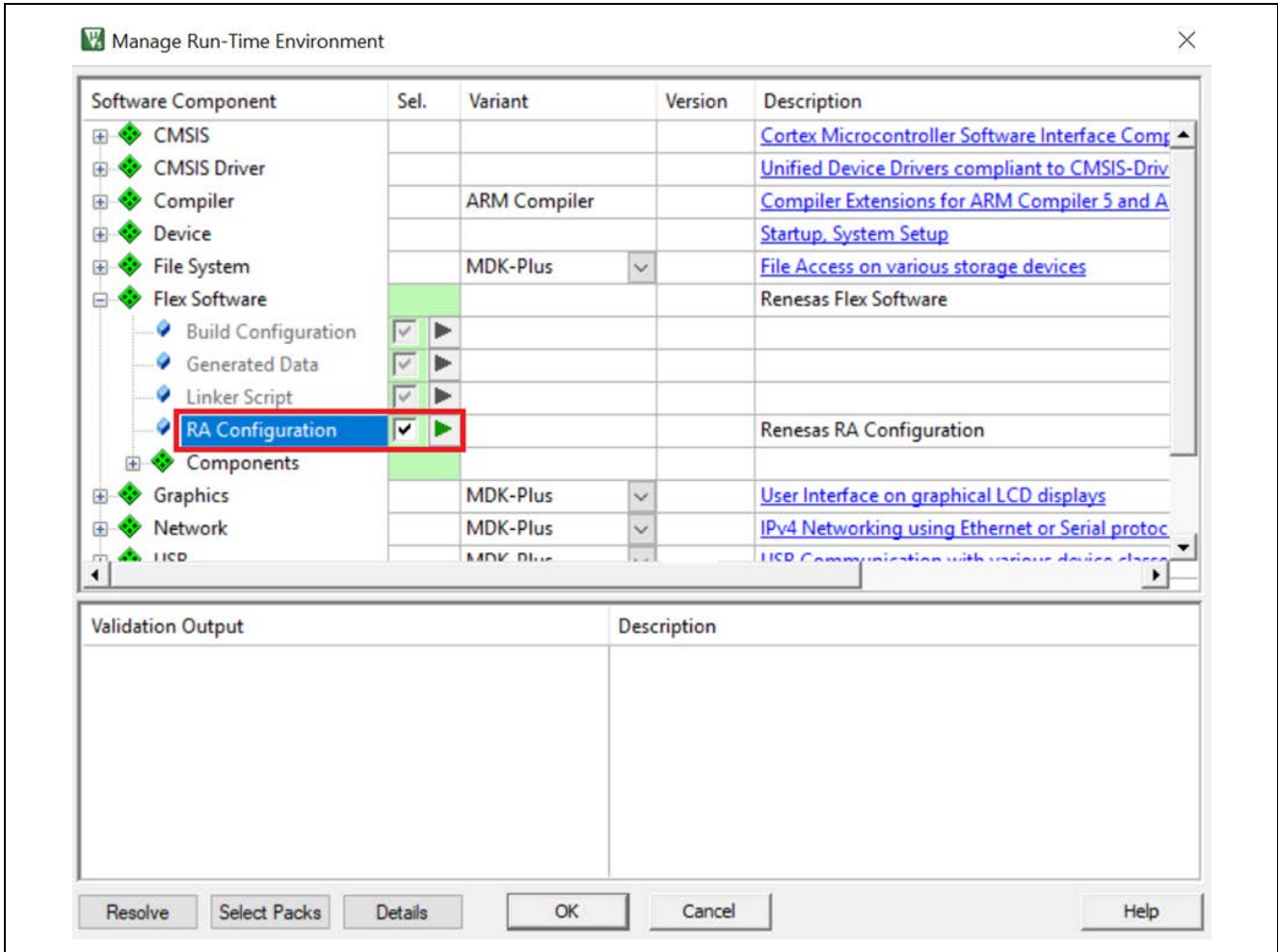


Figure 14. Project Structure

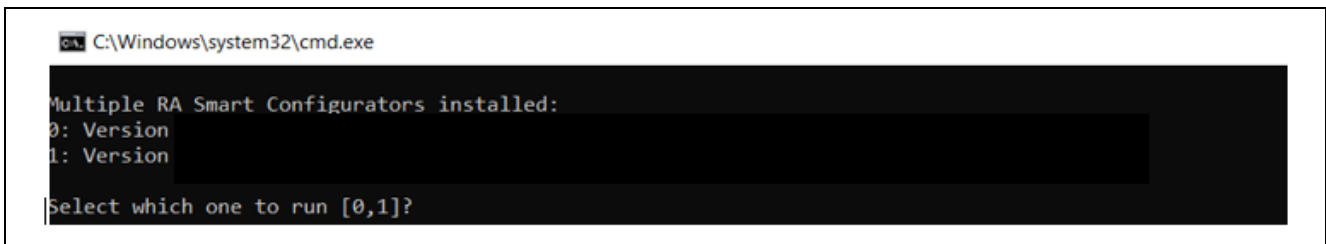
4. Now click on  to open **Manage Run-time Environment** tab.

5. Click the green run button next to **RA Configuration** in the **Flex Software** tree as shown in Figure 15.



**Figure 15. Clicking the Green Button for RA Configuration in the Flex Software Tree**

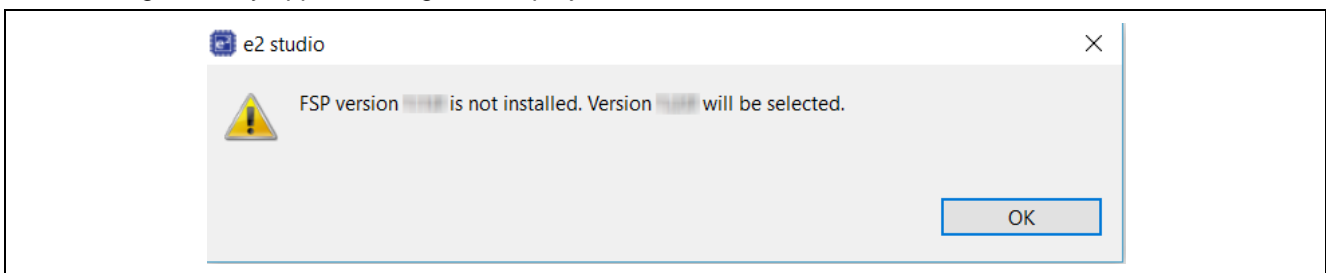
6. If multiple versions of RASC are installed, select the appropriate version of RASC to run.



**Figure 16. Selecting the Appropriate Version of RASC to Run**

7. RASC will be launched with project generator wizard.

8. A dialog box may appear to migrate the project to latest FSP version. Click **OK**.



**Figure 17. Notification Regarding FSP Version**



### 3.2 Generating the Project Files in Keil $\mu$ Vision

1. The configuration window opens once the project wizard is closed.
2. In the RA Configuration window, click the **Generate Project Content** button.

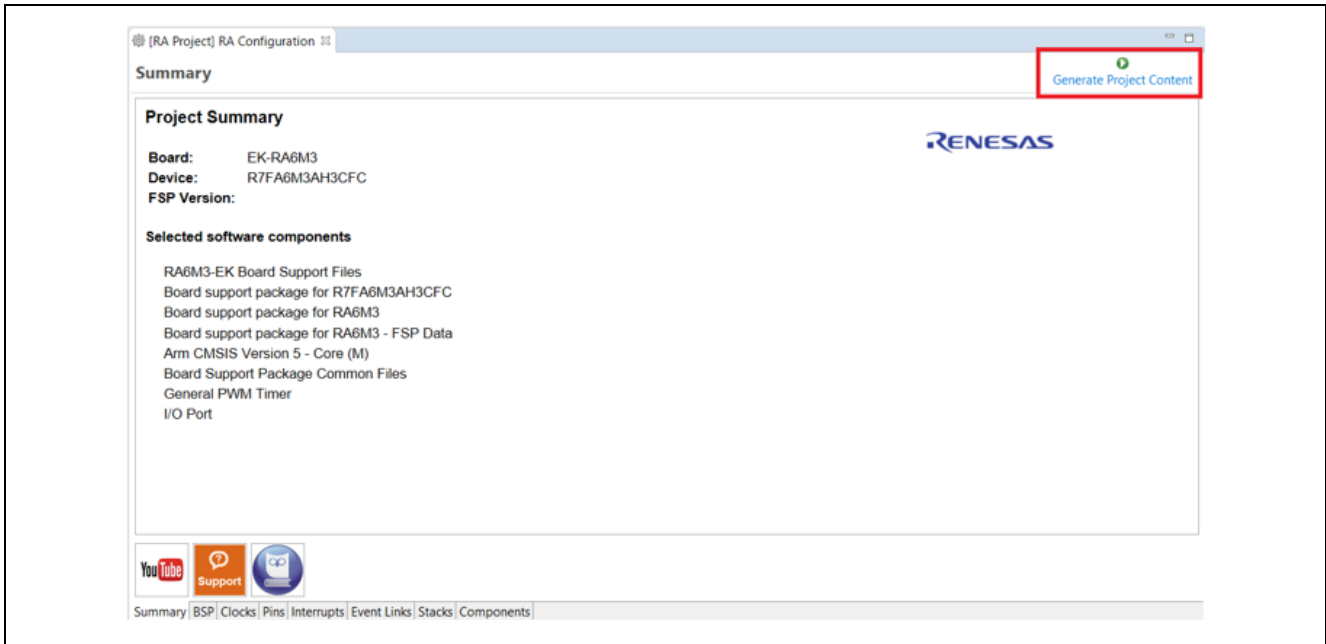


Figure 18. Clicking the Generate Project Content Button

3. After clicking **Generate Project Content** in the RA Smart Configurator, return to  $\mu$ Vision.  $\mu$ Vision offers a dialog box to import the changes and updates to the project made in RASC. Select **Yes** to import the updated project and the project is ready to build.

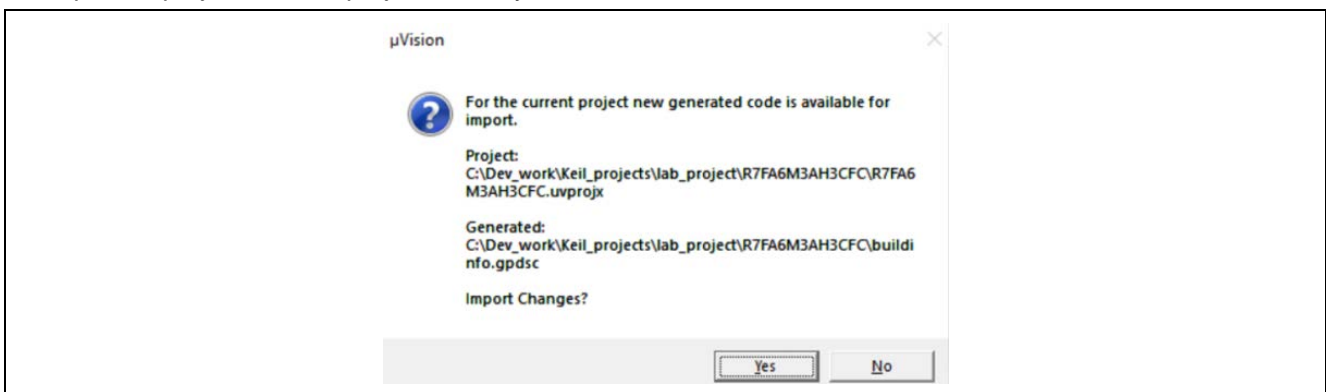


Figure 19. Importing Changes and Updates in the  $\mu$ Vision Window

4. RASC will place the necessary FSP source code and header files into the project workspace.

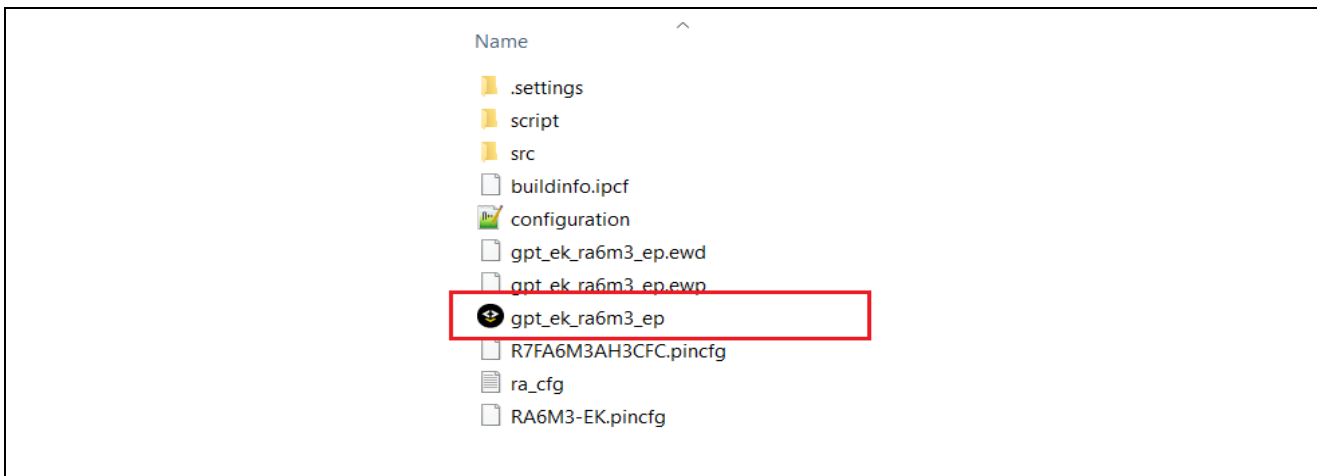
### 3.3 Building and Running the Project

Refer to the section “Using RA Smart Configurator with Keil MDK” in [FSP Documentation](#) for steps on building and running the project.

## 4. Migrating Project in IAR EWARM

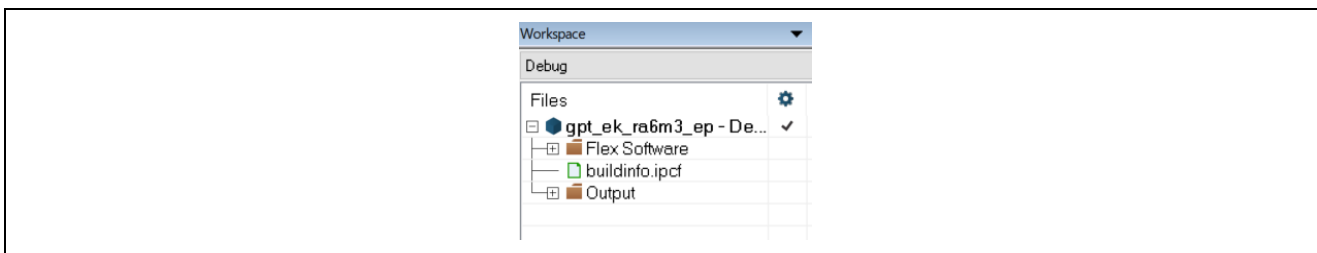
### 4.1 Migrating an Existing Project in IAR EWARM

1. Start by unzipping the example project, `gpt_ek_ra6m3_ep.zip`, and open the project in file explorer.
2. Open the IAR project by double clicking the IAR project file as shown in Figure 20.



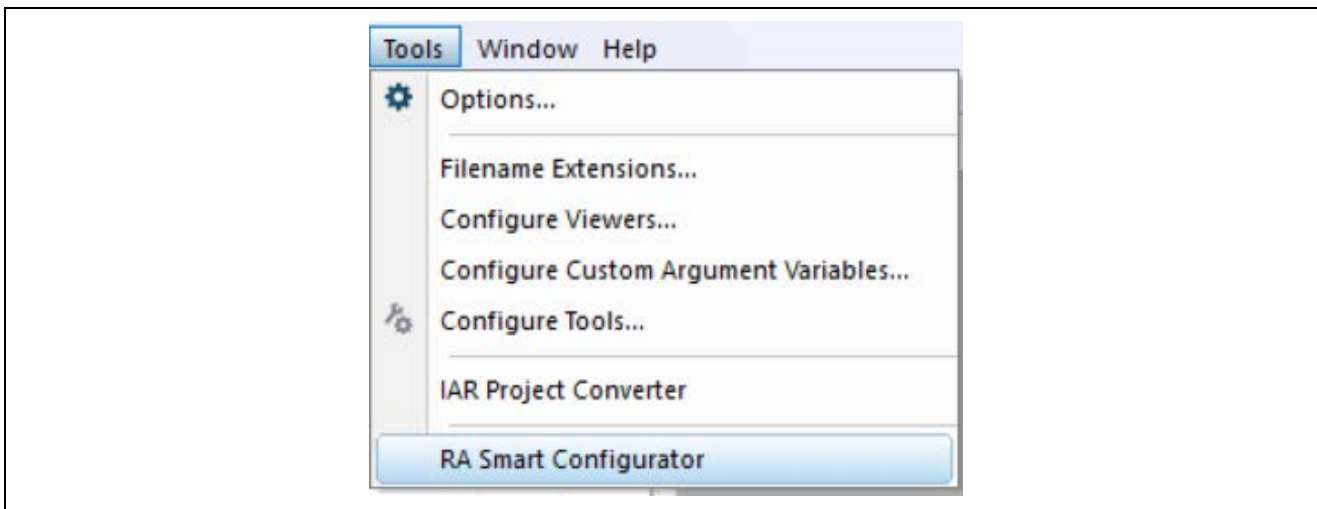
**Figure 20. Opening the IAR Project File**

3. After opening the project, you should see the project structure as shown in Figure 21.



**Figure 21. Project Structure**

4. RASC can now be launched from EWARM using the menu item **Tools > RA Smart Configurator**.



**Figure 22. Launching the RA Smart Configurator from EWARM**

5. RASC will be launched with project generator wizard.
6. A dialog box will appear to migrate the project to latest FSP version.

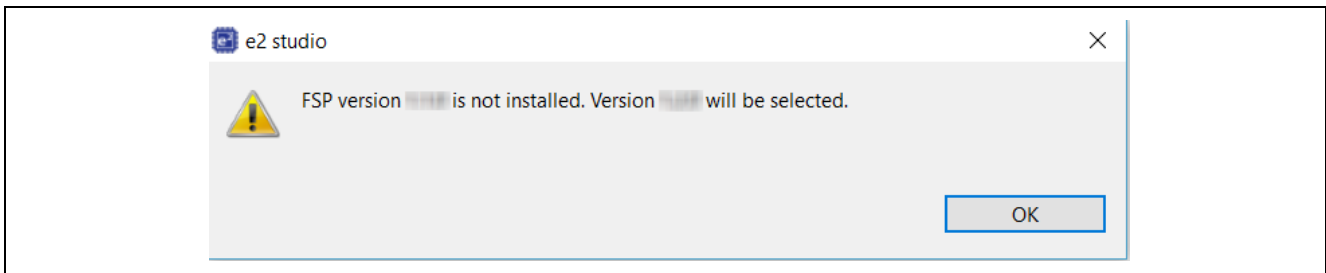


Figure 23. Migrating the Project to the Latest FSP Version

7. Click **OK**.

## 4.2 Generating the Project Files in IAR EWARM

1. The configuration window opens once the project wizard is closed.
2. In the RA Configuration window, click the **Generate Project Content** button.

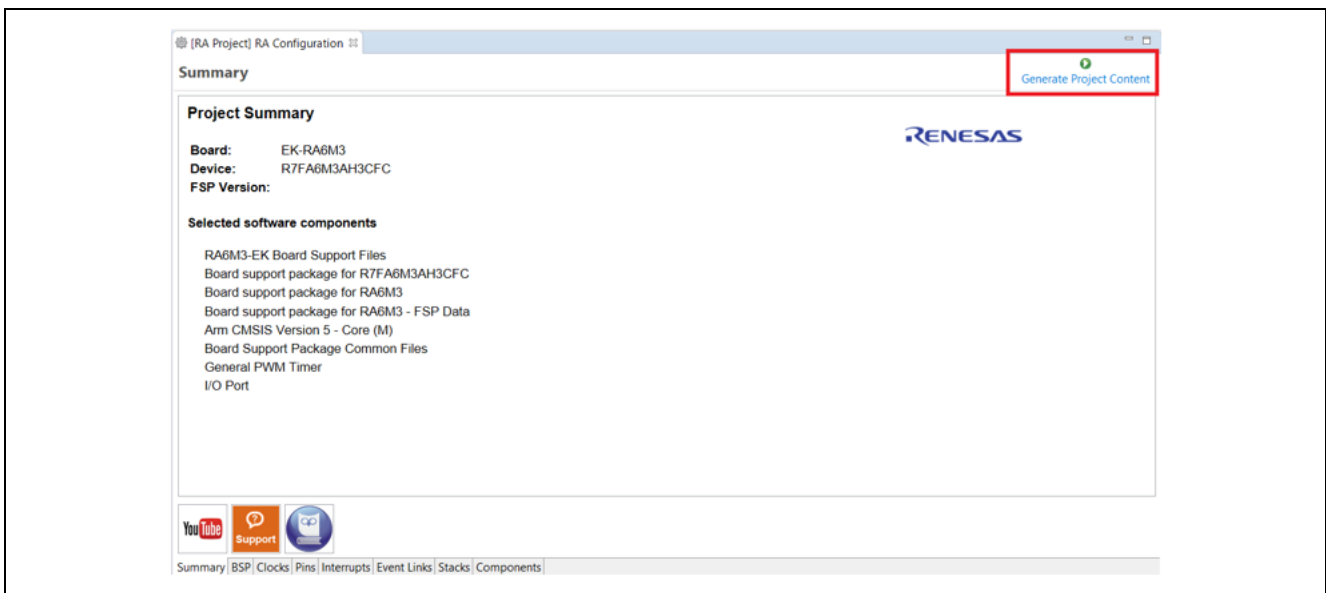


Figure 24. Clicking the Generate Project Content

8. After clicking **Generate Project Content** in the RA Smart Configurator, return to IAR EWARM.
9. Changes to the RA configuration will be reflected in the EWARM project.

## 4.3 Building and Running the project

Refer to [FSP Documentation](#) for steps on building and running the project.

**Website and Support**

Visit the following vanity URLs to learn about key elements of the RA family, download components and related documentation, and get support.

RA Product Information	<a href="http://www.renesas.com/ra">www.renesas.com/ra</a>
RA Product Support Forum	<a href="http://www.renesas.com/ra/forum">www.renesas.com/ra/forum</a>
RA Flexible Software Package	<a href="http://www.renesas.com/FSP">www.renesas.com/FSP</a>
Renesas Support	<a href="http://www.renesas.com/support">www.renesas.com/support</a>

**Revision History**

Rev.	Date	Description	
		Page	Summary
1.00	Sep.15.20	—	First release document

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